

## Insulin Resistance Associated Genes and miRNAs

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**Abstract** Type 2 diabetes mellitus is the result of resistance to insulin function along with inadequate insulin secretion, leading to a number of dysfunctions characterized by hyperglycemia, and it is associated with microvascular, macrovascular, and neuropathic complications. There is compelling evidence that the decline in both insulin sensitivity and insulin secretion has a genetic component. In addition, increasing evidence suggests that microRNAs (miRNAs) as key regulators of gene expression play significant roles in insulin production, secretion, and function that regulate the function of insulin-target tissues. The current review demonstrates the candidate genes and the related miRNAs involved in molecular pathogenesis of insulin resistance in type 2 diabetes mellitus. In doing so, it provides an opportunity for more focused investigations that may identify the genes and miRNAs with a role in the pathogenesis of type 2 diabetes mellitus and its treatment.

**Keywords** Type 2 diabetes mellitus • Insulin resistance • Gene • miRNA

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